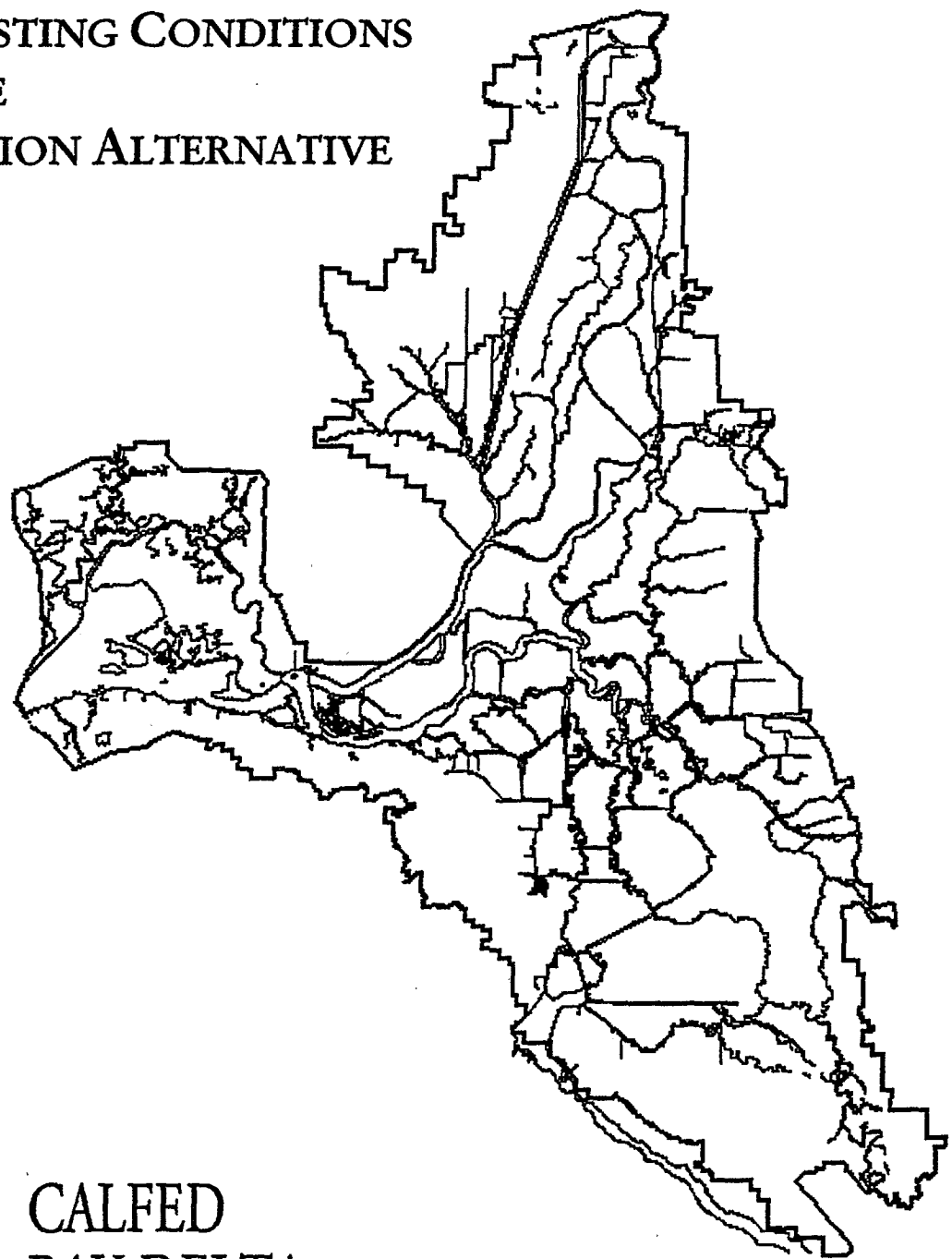
CALFED BAY-DELTA PROGRAM

FINAL REPORT ON ASSUMPTIONS FOR EXISTING CONDITIONS AND THE NO-ACTION ALTERNATIVE



CALFED
BAY-DELTA
PROGRAM

DECEMBER 30, 1996

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FINAL REPORT ON ASSUMPTIONS FOR EXISTING CONDITIONS AND THE NO-ACTION ALTERNATIVE

The CALFED Bay-Delta Program (CALFED) held a series of meetings with representatives of various interested parties to help determine appropriate assumptions to be used in developing existing conditions and the No-Action Alternative for the Programmatic Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Meetings were held on September 27, October 11, and November 15, 1996. The initial purpose of the meetings was to help CALFED determine appropriate assumptions to be used in DWRSIM modeling of existing conditions and the No-Action Alternative. Because of the interrelated nature of assumptions needed for DWRSIM modeling and those needed to generally develop the No-Action Alternative, the meetings evolved into a discussion of major assumptions for existing conditions and the No-Action Alternative.

This final report contains the following information:

- a description of the process used and a summary of key issues discussed at the meetings;
- a table showing key criteria and assumptions to be used by CALFED for existing conditions and the No-Action Alternative (Table 1);
- copies of all materials distributed at the meetings, including notes from the three meetings; and
- copies of all other materials distributed at the three meetings.

PROCESS/SUMMARY OF KEY ISSUES

During the three meetings, CALFED presented initial draft assumptions for the existing conditions and the No-Action Alternative. Each of these assumptions were discussed at length and either a general consensus was reached or the item was carried forward to the next meeting. At subsequent meetings, CALFED prepared and conducted a more detailed discussion of the items carried forward and discussed additional assumptions for existing conditions and the No-Action Alternative. All information presented or discussed in the meetings is presented in the minutes.

Listed below are issues that resulted in the most discussion at the meetings. With the exception of the first issue, Delta standards, resolution of these issues are discussed in the minutes of the November 15, 1996 meeting.

DELTA STANDARDS

Many participants were concerned about how existing and proposed standards would be used in the modeling effort and felt that CALFED should describe actual existing conditions and not rely on existing standards to describe conditions. The group indicated that the discussion of existing conditions should consider real-world conditions and recognize that standards generally represent minimum requirements that must be met. This issue is described in more detail in the materials distributed for the October 11, 1996 meeting.

CENTRAL VALLEY PROJECT DEMANDS

Some participants were concerned with how "demands" are used in DWRSIM modeling. Central Valley Project (CVP) demands are shown to increase under future-year conditions and participants questioned why these demands increased and whether demands, as used in the modeling, would always be met.

FUTURE DRINKING WATER REGULATIONS

Participants were concerned that the No-Action Alternative reflect the probable increasingly stringent drinking water regulations being considered by the State and federal governments.

AGRICULTURAL SUBSIDIES

Under current law, agricultural crop subsidies are being phased out.

WATER DEMANDS IN THE SACRAMENTO VALLEY

Central Valley Project Improvement Act (CVPIA) analyses developed future-year water demands based on historical water use or contractual amounts, whichever was less. However, in the Sacramento Valley area, water use by some has been less than the full contractual entitlements in recent years for a variety of reasons. Participants felt that water demands should include contractual entitlements because the recent historical period used for CVPIA did not accurately reflect existing and future conditions.

MOKELUMNE RIVER FLOWS

Participants had different concepts regarding appropriate flow assumptions to use for Mokelumne River flows under both existing conditions and the No-Action Alternative. There are several different flow standards that could be used in the DWRSIM modeling effort.

CVPIA 800,000-Acre-Foot Dedication

Considerable uncertainty exists regarding how the 800,000 acre-feet per year of dedicated water required under CVPIA will be used.

1995 Water Quality Control Plan Standards at Vernalis

There was considerable discussion regarding how to reflect implementation of the State Water Resources Control Board's 1995 Water Quality Control Plan. Based on available information, it appears that the flow standard at Vernalis cannot be met in dry years by the Central Valley Project. No other entity is responsible for meeting this standard. Some previous modeling has assumed that the standard will simply not be met, while others have assumed that the standard will be met but have not assigned responsibility or the water requirement for meeting this standard to any other party.

Table 1. Operational and Regulatory Criteria and Assumptions for Existing Conditions and the No Action Alternative

Criteria/Assumptions	CALFED Preliminary Existing Conditions	CALFED Preliminary No-Action Alternative
Level of Development	1995	2020
Delta Standards	1995 WQCP[2]	1995 WQCP
American River Standards	CVPIA flow criteria[3]	CVPIA flow criteria
Sacramento River Standards	Winter run/CVPIA flow criteria	Winter run/CVPIA flow criteria
Banks Export	6,680 cfs	6,680 cfs
Tracy Export	4,600 cfs	4,600 cfs
Folsom Reservoir Operations	400-670 TAF	400-670 TAF
COA[1]	Existing	Existing
Trinity River Flows	340 TAF in all years	340 TAF in all years[4]
Monterey Agreement	In place	In place
CVP Demands	6.1 MAF	6.5 MAF
SWP Demands	2.6-3.6 MAF	4.1 MAF
Refuge Demands	Level II	Level IV
Responsibility for Meeting Delta Standards	CVP/SWP	CVP/SWP
Tuolomne River Flows	New FERC flows	New FERC flows
Mokelumne River Flows	1961 DFG agreement	Newly negotiated flows under signed Principles of Agreement
Contract Renewals	Assume contract renewals identical to CVPIA PEIS	Same as existing conditions
Contract Amounts	Assume that all contracts will be renewed at current quantities; deliveries will be limited by existing facilities	Same as existing conditions
Water Rights	Assume full delivery of senior water rights	Same as existing conditions
Water Conservation	Assume systemwide water conservation levels as generally outlined in DWR Bulletin 160-93	Same as existing conditions

CVP and SWP Operations	Assume continued operations pursuant to the 1992 CVP operating criteria and procedures and current SWP operational criteria	Same as existing conditions
Land Retirement	Assume existing agricultural acreage	Assume that 45,000 acres are retired by 2020, consistent with Bulletin 160-93
Power Production	Assume, for modeling, that power is produced incidental to other operations	Same as existing conditions
Red Bluff Diversion Dam Operations	Assume existing operations of the dam	Same as existing conditions
Water Contract Rate Setting	Assume existing rate-setting policies	Same as existing conditions
Delta Barriers	Assume existing practices for placing Delta barriers	Same as existing conditions
Flood Control	Assume existing flood control policies	Same as existing conditions
Drinking Water Regulations	Assume existing drinking water policies and regulations	Assume more stringent drinking water policies and regulation in the future based on work being conducted by CUWA and CALFED
Groundwater Regulations	Assume existing groundwater regulation policies	Same as existing conditions
Agricultural Subsidies	Assume current agricultural subsidies	Assume elimination of agricultural subsidies by 2020
Endangered Species Listings	Assume current listed species	Assume no new listings of species

[1] COA sharing formula is based on operations under D-1485, not the 1995 WQCP. If changes are defined in the future, adjustments may be made.

[2] To address recent changes in the regulatory framework, CALFED is considering analysis of these changes that occurred between D-1485 and the 1995 WQCP.

[3] CALFED will also conduct a sensitivity analysis to assess potential increased demands on the American River system.

[4] Trinity River flows are the subject of a separate study. CALFED will conduct a sensitivity analysis to assess effects of other potential flow regimes.

Note: TAF=Thousand acre-feet
MAF=Million acre-feet

MINUTES

EXISTING CONDITIONS/NO-ACTION ALTERNATIVE MEETING

NOVEMBER 15, 1996

CALFED
BAY-DELTA
PROGRAM

1416 Ninth Street, Suite 1155
Sacramento, California 95814

(916) 657-2666
FAX (916) 654-9780

Date: December 17, 1996

To: Interested Parties (Existing Conditions/No Action Alternatives)

From: Lester A. Snow, Executive Director
CALFED Bay-Delta Program

Subject: Minutes, November 15,1996, Existing Conditions/No Action Alternative Meeting

Attached are the minutes of our November 15,1996 as well as several related items. Within the next two weeks we hope to be able to send you a report wrapping up the work to date. If you have any questions, please contact Rick Breitenbach at (916) 657-2666.

Attachments

Meeting Summary
Existing Conditions and No-Action Alternative

Attendees: John Davis, Harlan Glines, Doug Brewer, Kathy Kunysz, Dan Steiner, Kaylea White, Brian Campbell, Jim Martin, Rick Breitenbach, Dan Fults, Jeff Jaraczeski, Pierre Stephens, Terry Erlewine, Stein Buer, Tom Zuckerman, Chet Bowling, Terri Anderson, Andrew Hamilton, Karra Harrigfeld, Cynthia Koehler.

Summary

A meeting was held on Friday, November 15, 1996 to discuss seven assumptions needing further clarification or definition for either Existing Conditions and/or the No-Action Alternative. The assumptions were described in a three-page memorandum that was provided to the meeting attendees. A copy of the memorandum is provided as an attachment to this summary. Each of the assumptions were described by CALFED staff and comments were solicited from the meeting attendees. This memorandum summarizes the comments and questions raised by the group at this meeting. Also attached to this memorandum are several items requested by meeting attendees.

Questions, Comments and Information Requests

Water Demands

Questions were raised about what "demands" really represented in DWRSIM. The issue of upstream demands and how they are represented in the model (water use and demand upstream of major storage facilities). Participants stated that CALFED work needs to be consistent with demands in DWR Bulletin 160. CALFED agreed to check and ensure that water demands in DWRSIM input files are consistent with DWR Bulletin 160.

George Barnes of DWR verified that upstream demands in DWRSIM are based on Bulletin 160.

Drinking Water Regulations

Participants stated that the No-Action Alternative should include anticipated drinking water quality standards that may affect SWP exports. Participants suggested CALFED talk to Ray Wolfe, Rick Woodard at DWR, or Byron Buck at CUWA. Rick Breitenbach spoke with both Rick Woodard and Byron Buck and requested a copy of the work on standards being developed by CUWA. CALFED will review the work and as appropriate, propose an approach for inclusion in the No-Action Alternative.

Concerns were raised about the effect of bromides on THM concentrations in water supplies. EPA has been considering more stringent THM standards. Participants asked whether

DWRSIM has bromide modeling capability. DWR has developed a separate THM model that could be used but is not linked with DWRSIM. CALFED was asked to obtain a copy of the model report and distribute it to attendees. A copy of this report is available from CALFED.

There was a request for information about how Stockton East's water demands are modeled in DWRSIM. Paul Hutton of DWR provided the following response.

Stockton East demands are modeled in DWRSIM in accordance with criteria provided by USBR in an April 26, 1996 letter to SWRCB. A maximum of 155 TAF/yr is delivered to Stockton East and Central San Joaquin Irrigation District. Deliveries are a function of Delta standard and the New Melones water supply term: (February end of month storage + remaining water year forecasted inflow) as follows:

Stor+Inf	D-1485	WQCP
0-1700 TAF	0 TAF/yr	0 TAF/yr
1700-2000 TAF	25 TAF/yr	0 TAF/yr
2000-2300 TAF	60 TAF/yr	0 TAF/yr
> 2300 TAF	155 TAF/yr	155 TAF/yr

The 155 TAF/yr maximum is comprised of the following demands:

49 TAF/yr firm to Central San Joaquin
31 TAF/yr interruptible to Central San Joaquin
75 TAF/yr interruptible to Stockton East
---
155 TAF/yr total

Therefore, deliveries are made to Stockton East only when Stor+Inf is greater than 2000 TAF. When it is between 2000-2300 TAF, delivery to Stockton East is 11 TAF/yr (60-49) under D-1485 and 0 TAF/yr under WQCP. When Stor+Inf is greater than 2300 TAF, delivery to Stockton East is 75 TAF/yr under both Delta standards.

Agricultural Subsidies

Participants generally concurred that the No-Action Alternative should include phasing out of agricultural subsidies. However, phasing out subsidies could affect water demands. CALFED was asked to check DWR Bulletin 160 to determine how it addresses agricultural subsidies and to check with the folks preparing the CVPIA PEIS for information about the affect of subsidies on water demands.

Nasser Bateni of DWR indicated that Bulletin 160-93 assumes subsidies will decrease over time

and would be quite low by 2020. Upcoming Bulletin 160-98 will assume that subsidies are eliminated by 2020.

Gwen Bucholz of Montgomery Watson indicated there has been no evaluation in the CVPIA PEIS on how curtailment of subsidies might impact water demands. If this information becomes available in the future we will provide the analysis to meeting participants.

Mokelumne River Instream Flows

There was continued discussion regarding the appropriate instream flow assumptions to use for both existing conditions and the No-Action Alternative. No consensus was reached at the meeting. Subsequently, the primary interested parties concurred that the appropriate flow assumptions to use are the existing 1961 DFG agreement under existing conditions, and POA flows under the No-Action Alternative. A copy of a EBMUD's letter to Lester A. Snow is attached.

Sacramento Valley Water Demands

In general, the group concurred with the CALFED proposal to use full contract entitlement for the Tehama Canal water users and suggested expanding this approach to all Sacramento River water users. The group also stated that CALFED needs to recognize that when reviewing historical data, in some years, water use and deliveries in the valley are based on the timing of water forecasts by Reclamation. Substantial delays in water supply forecasting can have a major affect on the types of crops that are grown and, the resulting crop value. Higher value crops are generally planted when Reclamation forecasts full water deliveries There are competing demands for water quality and water conservation in the valley.

800,000 Acre-Foot CVPIA Dedication

The group generally concurred with the approach by CALFED, to recognize that substantial work is proceeding on this issue and that CALFED will monitor and develop a strategy when the ongoing efforts are complete. CALFED's proposal will be distributed for review and comment at that time.

Water Quality Standards at Vernalis

In general, participants concurred with CALFED's proposed approach. SWRCB is in the process of preparing its EIR process on the Water Quality Control Plan. One outstanding question is whether the Bureau of Reclamation's practice of limiting non-flood control releases from Goodwin Dam to 1,500 cfs is part of DWRSIM modeling assumptions. This limitation has been the standard practice of Reclamation because of downstream flooding and seepage concerns that arise when flows in excess of 1500 cfs are in the stream.

George Barnes of DWR indicated that the 1500 cfs limitation was currently not part of DWRSIM modeling assumptions. Further, the SWRCB decided not to use the 1500 cfs limitation in their Water Quality Control Plan EIR because the flooding and seepage concerns are not documented.

Attachment

Assumptions for Existing Conditions and the No-Action Alternative

This paper addresses previously discussed assumptions which need further clarification or definition. The purpose of this discussion is to present issues as we understand them, and to discuss the varying points of view, where appropriate, that have been expressed. A proposal is presented following the discussion.

Issue 1: What Is Meant by the Term "Demand" in DWRSIM Modeling and Why Do CVP Demands Increase Between 1995 Level of Development and 2020 Level of Development?

As used in DWRSIM (and PROSIM) modeling, "demand" refers to the amount of water assumed to be "requested" by water contractors. The model tries to meet those demands each month but is constrained by prior water rights, water quality requirements, and compliance with the biological opinions. The Central Valley Project (CVP) and State Water Project (SWP) demands are shown to increase between 1995 and 2020. For example, Contra Costa Water District is currently using approximately 140,000 acre-feet per year, but has a contract for 195,000 acre-feet per year and their demands are expected to increase to that contract limit by 2020. However, because of the constraints described above, actual modeled water use may not reach these levels in any given year.

> **CALFED Proposal:** Continue to use appropriate CVP and SWP demands in the modeling effort and verify the precise volume of those demands.

Issue 2: What Assumption Should CALFED Make Regarding Future Drinking Water Regulations?

CALFED's current proposal is to assume that current drinking water standards will continue into the future. Although it is recognized that drinking water standards may become more stringent, there is no specific information to support changing CALFED's current proposal. One representative expressed a desire to possibly provide additional input on this issue.

> **CALFED Proposal:** Continue with this assumption unless additional information is provided.

Issue 3: What Assumption Should CALFED Make Regarding Agricultural Subsidy Programs?

Agricultural subsidy programs are currently being phased out nationwide. However, current law provides for them to be reinitiated. Crop subsidies have the potential to affect agricultural economics and agricultural economic modeling. This assumption also has some potential to affect demands for water.

> **CALFED Proposal:** Assume that existing crop subsidy programs are phased out by 2020

consistent with current laws and regulations and consistent with assumptions made for the CVPIA PEIS. The effects of this assumption on demands will be verified as discussed under Issue 1.

Issue 4: What Are the Appropriate Flow Standards to use on the Mokelumne River for Both Existing Conditions and the No-Action Alternative?

EBMUD is currently required to meet certain flow standards below Camanche Reservoir based on a 1961 agreement with DFG. In recent years, EBMUD has generally been voluntarily operating the system to meet flows identified in the Lower Mokelumne River Management Plan (LMRMP) on a year-to-year basis. EBMUD is also in the process of negotiating new flow standards with DFG and USFWS (POA flows). EBMUD has indicated a preference for using the 1961 agreement for existing conditions and the POA flows under the No-Action Alternative. DFG has indicated a preference for using the LMRMP flows under both scenarios.

CALFED Proposal: Assume LMRMP flows under both existing conditions and the No-Action Alternative. These are the flows that the river is currently being managed to meet, and there is no other generally accepted flow standard to assume for the Mokelumne River under the No-Action Alternative.

Issue 5: What Water Demands Should Be Used for Sacramento Valley (Tehama-Colusa Canal) CVP Water Users?

It is our understanding that historically the TC Canal users have used their full contract entitlements. In recent years, for a variety of reasons, some of the CVP contractors have used less than their contract allotments. Others have used more than their contract entitlements, however, through exchanges and transfers. As a whole, CVP water use within the basin has been approximately equal to the full contract entitlement. Assumptions used as part of the CVPIA PEIS process limited demands to full contract entitlements for each entity or recent historical water use (1980-1993), whichever was less.

CALFED Proposal: Use full contract entitlements to develop demands for TC Canal users. This approach accounts for water that is used within the area. However, as described above, these demands may not be met in all years because of the various constraints imposed on the system.

Issue 6: How Should CALFED Portray the 800,000 Acre-Foot/Year Dedication Required Under CVPIA?

There appears to be no general agreement on how to portray the long-term use of the 800,000 acre-foot/year dedication. The information currently available is described in the draft DWRSIM assumption sheets provided to the group at our first meeting under "CVPIA Flow Criteria". The CVPIA PEIS assumed that the 800,000 af/year would be used in the upstream river basins. There is some ongoing discussion on using part of the 800,000 to meet certain Delta needs.

CALFED Proposal: Use the "CVPIA Flow Criteria" assumptions, updated as necessary and available, in both its existing conditions and No-Action Alternative modeling pending further refinement and definition of these criteria. No better information is available. If, during the CALFED modeling and impact assessment process, further information becomes available, a decision will have to be made on whether to and how to incorporate that information.

Issue 7: What Assumptions Should Be Made Regarding 1995 Water Quality Control Plan Standards at Vernalis?

At our first meeting, we proposed to use the 1995 Water Quality Control Plan (WQCP) standards for existing conditions. This approach was generally accepted. However, some participants pointed out that the flow standard at Vernalis cannot be met in all years because only Reclamation is required to meet the standards and the Stanislaus River system cannot be operated to meet these standards in dry years.

We also suggested that the 1995 WQCP standards be used for the No-Action Alternative and that CALFED assume that the standards would be met. Several participants suggested that because the State Water Resources Control Board is in the process of reviewing the standards, and because there is no certainty about the standard that will ultimately be adopted, CALFED should look at a range of potential standards.

CALFED Proposal: For existing conditions, use the existing situation as the modeling assumption. This approach would show that the Vernalis flow standard would not be met in some years. For the No-Action Alternative, show that the standard would be met, but do not imply or impose responsibility for meeting this standard on any particular party or set of parties. By looking at both scenarios, this approach allows CALFED to examine a reasonable range of flows, and it would provide useful information regarding the "water cost" of meeting the standard without attributing responsibility to any particular entities.

In addition, as noted in previous discussions, CALFED will continue to look at the water supply effects of recent changes in the water quality standards (i.e., D-1485 to the 1995 WQCP) to clearly describe the "water cost" of this change.